

Survey QAQC Update

Phil Harbidge

Sperry Drilling Services Halliburton phil.harbidge@halliburton.com





Ciarán Beggan's Biography – British Geological Society Over 26 years Geophysics and Well positioning Research and Services

Work: British Geological Society – Geomagnetism, Core Field and Lithospheric Modelling, Space Weather risk and impacts, Geomagnetically Induced Currents

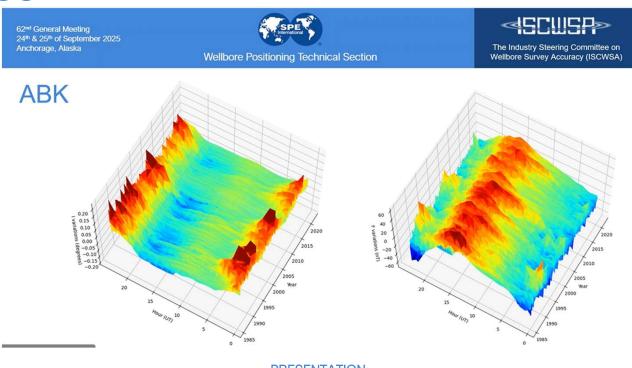
Projects: IGRF, ESA SWARM, BGGM, GIC in UK Railways, space weather effects on UK electrified railways, SWIMMR N4, SAGE Met Office Space Weather Operations Centre, SWIGS and IIFR Interpolation In-Field Reference Worked:

Selex Airborne Sensors and BGS: PhD University of Edinburgh, Scotland



3

When to run IFR2 Service Ciarán Beggan - BGS



PRESENTATION





- ISCWSA MultiStation Analysis workshop MWD magnetic survey data in the MSA instability zone or SC no go zone, enough surveys, HSTF change, more
- Minimum directional survey data set needed to quality control and quality assure
- Roll out of new ISCWSA Rev 5.0 / 5.1* PUMs are we managing QAQC feedback
- Roll out of new ISCWSA Collision Avoidance Rules QAQC OWSG feedback
 - Modify Surface Margin for top hole batch set operations
- Wired Pipe what's next for Advanced Wellbore Positioning QAQC Minutes published
- Project suggestions from the group
- eBook Volunteers / tech writer and publishing costs Tech writer Sponsor
- Wrap up actions



eBook

- MWD
- Gyro
- Drilling Survey Record
- Depth
 - Intro for Depth to write
- Tech Writer
 - Publish 2025



Planning tool – permissions to use HAL / Shell

- Industry DI Calculator combined with Az error (uncertainty) Calculator multistation analysis stability calculator for SF XY & dbz correction tool – ISCWSA API roll out
- Dipe, BTe, survey Interval, Geomagnetic field BGGM / IFR1 / IFR2 / ZOE Angle X RSS MTF to GTF switch over and SC No Go Zone
- Record of the plan and actual Uncertainties planned for vs actual (BTe Dipe), geomag ref, tool reliability BG miss, Ref Geomag, Gravity Ref. Add term to ISCWSA model
- Proposal for SW Providers to facilitate auto generation of a recommended template with required data integrated
- Action Phil & Wout Kjoutis to meet Q4 2025



Wired Pipe Deployment

New access to Rotational 6 axis survey while drilling continuous surveys & multi sensor raw data

- 1, 2, 5, 10, 15, vs old 30m/38m / 40m drilling stand stationary data rotating survey procedure.
- Geosteering decisions with real time tortuosity measurements
- Engineering decisions steering, WOB Vibration, and Optimization using realtime higher definput data to optimise earlier while drilling, for next phases of the well construction process.



Projects Ongoing

QAQC Parameters Survey Related to New WPTS Error Model (s) •

FAC related to positional uncertainty model – guidance on gross errors captured, not capturing all

Validation methods for different levels Accuracy of Corrections as per claimed accuracy for PUM used, IFR1+MSA, IFR2+MSA,

New generation of MEMS sensor packages, high definition survey micro dogleg correction, (Dual Inc) and Well Depth

QAQC Software testing project UPDATE Darren A & Mahmoud E SLB, Chad H SQC, Morten G BHGE, Patrick K HAL, Mike L ROUNDLAB, Mike C 3SIG WDESIGN, Marc W MAGVAR, WFD?



Thanks to

Manufacturer & Calibration Experts: BenchTree, Scientific Drilling, Halliburton, Gyrodata, Schlumberger, Baker Hughes, Weatherford and JAE, ICE FIELD TOOLS

Operator Experts: Chevron, Oxy, ConocoPhillips, BP, Devon Energy, ExxonMobil, Shell, TotalEnergies, AkerBP, Vår Energi, Equinor

Service Company Experts: Baker Hughes, Halliburton, Depth Solutions, Schlumberger, Weatherford, Gyrodata, Scientific Drilling, Mostar Drilling, SuperiorQC, Independent Consultants, EOG Resources, PathControl, Pacesetter Directional, XnDrilling....



Webmaster Update

Phil Harbidge

Sperry Drilling Services Halliburton phil.harbidge@halliburton.com





Activity

UPCOMING 5 EVENTS				
Date	Name	Registrations	Paid %	
Thu, Sep 25, 2025	ISCWSA #62 General Meeting Anchorage, Alaska	73/125	98.44%	

TOP 5 FORMS				
Name	30-Day Submissions			
Application for Course Registration	<u>10</u>			
<u>Get Updates</u>	2			
Contact Us	<u>6</u>			
Register for "Intro to Wellbore Positioning"	<u>5</u>			
Application for Course Registration - Prepaid Registrants	<u>3</u>			

TOP 5 PAGES		
Pages	30-Day Traffic	
	3156	
Error Model Documentation	543	
The ISCWSA Wellbore Positioning Course	431	
eBOOKs	416	
About The Industry Steering Committee on Wellbore Survey Accuracy	337	
Video Library	236	

TOP 5 EVENTS	
Events	30-Day Traffic
	6278
ISCWSA #62 General Meeting Anchorage, Alaska	909
ISCWSA #62 Subcommittee Meetings Anchorage	405
ISCWSA #60 - New Orleans, Louisiana, USA	123
ISCWSA #56 - Houston, 5/6 October 2022	110
ISCWSA #61 - Stavanger, Norway	108

Webmaster Update

17

580 Results





The Industry Steering Committee on Vellbore Survey Accuracy (ISCWSA)

Files

definition-of-iscwsa-error-model-v5-13.pdf Created Jan. 20, 2023, 8:08 a.m. well-intercept-sub-committee-ebook-version-3-2021pdf Created Dec. 18, 2020, 4:39 a.m. toolgroup-owsg-a-rev-5-1-08-oct-2020-produced-23-sep-2022.xlsx Created Sept. 23, 2022, 8:31 a.m. current-common-practice-in-collision-avoidance-calculations-2011-chinese.pdf Created July 11, 2019, 10:06 a.m. introduction-to-wellbore-positioning-ebook-v9-10-2017.pdf Created Oct. 10, 2021, 11:12 p.m. mahmoud-elgizawy.jfiff Created March 9, 2020, 2:11 a.m. isc-t50-additional-tool-models.pdf Created April 9, 2021, 11:16 a.m. api-rp-78-directionalsurveyrecords-2020-05-06-version10-not-final.docx Created May 8, 2020, 10:26 a.m. details-of-iscwsa-mwd-error-models-to-rev4-05-jun-2015-excel.xlsx Created July 11, 2019, 1:57 p.m. toolgroup-owsg-b-rev-5-1-08-oct-2020-produced-23-sep-2022.xlsx Edit	ons
Created Dec. 18, 2020, 4:39 a.m. 150 Created Sept. 23, 2022, 8:31 a.m. Current-common-practice-in-collision-avoidance-calculations-2011-chinese.pdf Created July 11, 2019, 10:06 a.m. 129 introduction-to-wellbore-positioning-ebook-v9-10-2017.pdf Created Oct. 10, 2021, 11:12 p.m. 127 Ffiletype mahmoud-elgizawy.jfiff Created March 9, 2020, 2:11 a.m. 127 isc-t50-additional-tool-models.pdf Created April 9, 2021, 11:16 a.m. 124 Created May 8, 2020, 10:26 a.m. details-of-iscwsa-mwd-error-models-to-rev4-05-jun-2015-excel.xlsx Created July 11, 2019, 1:57 p.m. toolgroup-owsg-b-rev-5-1-08-oct-2020-produced-23-sep-2022.xlsx Edit toolgroup-owsg-b-rev-5-1-08-oct-2020-produced-23-sep-2022.xlsx	Delete
Created Sept. 23, 2022, 8:31 a.m. Current-common-practice-in-collision-avoidance-calculations-2011-chinese.pdf Created July 11, 2019, 10:06 a.m. introduction-to-wellbore-positioning-ebook-v9-10-2017.pdf Created Oct. 10, 2021, 11:12 p.m. Edit Pfiletype mahmoud-elgizawy.jfiff Created March 9, 2020, 2:11 a.m. isc-t50-additional-tool-models.pdf Created April 9, 2021, 11:16 a.m. api-rp-78-directionalsurveyrecords-2020-05-06-version10-not-final.docx Created May 8, 2020, 10:26 a.m. details-of-iscwsa-mwd-error-models-to-rev4-05-jun-2015-excel.xlsx Created July 11, 2019, 1:57 p.m. toolgroup-owsg-b-rev-5-1-08-oct-2020-produced-23-sep-2022.xlsx Edit	Delete
145 Created July 11, 2019, 10:06 a.m. 129 Created Oct. 10, 2021, 11:12 p.m. 127 Filletype Mahmoud-elgizawy.jfiff Created March 9, 2020, 2:11 a.m. 127 Created April 9, 2021, 11:16 a.m. 128 api-rp-78-directionalsurveyrecords-2020-05-06-version10-not-final.docx Created May 8, 2020, 10:26 a.m. 114 Created July 11, 2019, 1:57 p.m. 100 Created July 11, 2019, 1:57 p.m.	Delete
Created Oct. 10, 2021, 11:12 p.m. mahmoud-elgizawy.jfiff Created March 9, 2020, 2:11 a.m. isc-t50-additional-tool-models.pdf Created April 9, 2021, 11:16 a.m. api-rp-78-directionalsurveyrecords-2020-05-06-version10-not-final.docx Created May 8, 2020, 10:26 a.m. details-of-iscwsa-mwd-error-models-to-rev4-05-jun-2015-excel.xlsx Created July 11, 2019, 1:57 p.m. toolgroup-owsg-b-rev-5-1-08-oct-2020-produced-23-sep-2022.xlsx Edit	Delete
127 Created March 9, 2020, 2:11 a.m. 127 Created March 9, 2020, 2:11 a.m. 128 isc-t50-additional-tool-models.pdf Created April 9, 2021, 11:16 a.m. 129 api-rp-78-directionalsurveyrecords-2020-05-06-version10-not-final.docx Created May 8, 2020, 10:26 a.m. 110 created July 11, 2019, 1:57 p.m. 110 toolgroup-owsg-b-rev-5-1-08-oct-2020-produced-23-sep-2022.xlsx	Delete
Created April 9, 2021, 11:16 a.m. api-rp-78-directionalsurveyrecords-2020-05-06-version10-not-final.docx Created May 8, 2020, 10:26 a.m. details-of-iscwsa-mwd-error-models-to-rev4-05-jun-2015-excel.xlsx Created July 11, 2019, 1:57 p.m. toolgroup-owsg-b-rev-5-1-08-oct-2020-produced-23-sep-2022.xlsx	Delete
124 Created May 8, 2020, 10:26 a.m. Edit 114 details-of-iscwsa-mwd-error-models-to-rev4-05-jun-2015-excel.xlsx Edit 100 toolgroup-owsg-b-rev-5-1-08-oct-2020-produced-23-sep-2022.xlsx Edit	Delete
114 Created July 11, 2019, 1:57 p.m. toolgroup-owsg-b-rev-5-1-08-oct-2020-produced-23-sep-2022.xlsx Edit	Delete
100 Edit	Delete
Created Sept. 23, 2022, 8:32 a.m.	Delete



Actions

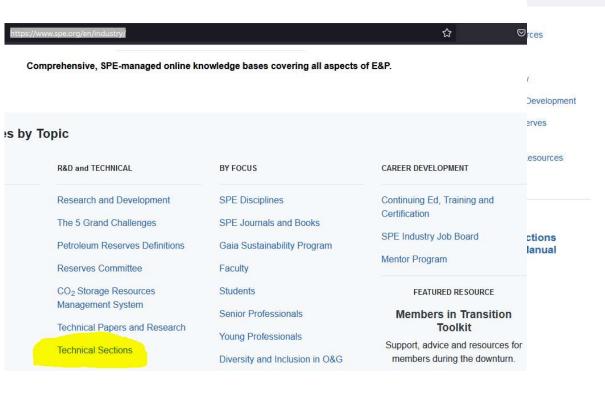
- ISCWSA.net site SEO needs some work
- Need to register a new ISCWSA.net e-mail account volunteer?
- Shared folders for collaboration SPE.org site
- Ideas on how we store our data, files and reports indefinitely
- DSABOK, SPE sharepoint, time capsule
- github



How to Join the WPTS

https://www.spe.org/en/industry/technical-sections/

https://www.spe.org/en/industry/technical-sections/



Technical Sections

Technical Section represents a grouping of global members who share an interest in a specific technical topic. These communities of SPE members share ideas, promote competence, and develop projects related to their technical interest. Technical Sections tend to be more task-oriented than discussion-oriented. They meet virtually for the most part, but are encouraged to hold a face-to-face meeting at least once a year.

Join a Technical Section here.

Current Technical Sections

- · Artificial Lift and Gas Well Deliquification
- . Carbon Dioxide Capture, Utilization and Storage
- . Drilling Systems Automation
- · Digital Energy
- . Drilling Uncertainty Prediction
- Flow Assurance
- · Flow Measurement
- Geomechanics
- Human Factors
- · Hydraulic Fracturing
- Petroleum Data-Driven Analytics (PD²A)
- · Research and Development
- Separations Technology
- · Sustainable Development
- Unmanned Systems
- · Water Life Cycle and Strategy
- Wellbore Positioning
- Well Integrity



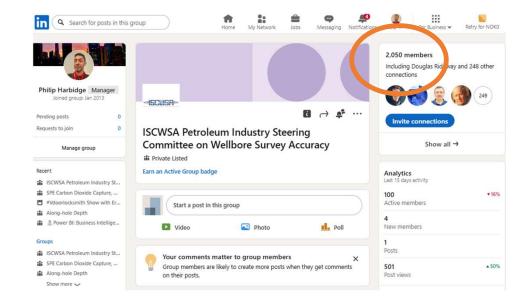


Wellbore Survey Accuracy (ISCWSA)

Other ISCWSA Social Media

Click here for the ISCWSA LinkedIn page

2050 Members with a very small 6 months increase in membership of 8!



Webmaster Update 22



Website Enhancements

- Sub-committee Chairs and member Call for Website new functionality ideas?
- Improvements Meeting with Tendenci 2025 :
 - Sub-committee e-mail account Done
 - Voting functionality in progress
 - Controlled document storage Done
 - sub-committee projects, e-books and group documents
 - Blog functionality for Main Page & EM, CA, WI, QAQC and EDU Sub-committee pages in progress

Title of slide 23



Thanks to

- ISCWSA Committee
- Sub-Committee Chairs
- All Members feedback and support on the website
- Tendenci
- Robert Wylie

Phil Harbidge phil.harbidge@halliburton.com

Webmaster Update 24















Questions?